

NATIVE PLANTS

HOW TO ATTRACT
FUN-TO-WATCH
WILDLIFE

FOR YOUR

Landscape

Whether you have a balcony garden, a small urban lot, a 4-acre parcel or a sprawling ranch, you can include native plants in your landscape. There are many reasons to embrace the use of Missouri's wonderful native plants. They create beauty and interest with a progression of flowers and fruits, and they furnish food and cover for butterflies, birds and other wildlife. In addition, they:

- 🌿 Are adapted to our climate
- 🌿 Are adapted to our soils
- 🌿 Require little or no irrigation
- 🌿 Seldom require fertilizer or pesticides



Serving nature and you®



What is Native and Why it Matters

- 🌿 The current mix of Missouri native plants has been here since the last Ice Age, about 10,000 years ago.
- 🌿 Native plants evolved with Missouri's geology, climate and wildlife.
- 🌿 Many wildlife species prefer native plants for habitat and depend on them for survival.
- 🌿 Well-established and maintained native-plant communities help resist invasive non-natives that threaten wildlife habitat and crops.
- 🌿 Native plants help preserve our natural diversity.

Facts about lawns

- 🌿 A lawn mower pollutes as much in one hour as driving a car 20 miles.
- 🌿 Lawn mowers use 580 million gallons of gasoline each year.
- 🌿 Thirty to 60 percent of urban fresh water is used for watering lawns.
- 🌿 About 67 million pounds of pesticides are used on U.S. lawns each year.



Reduce mowing and increase biodiversity with these environmentally friendly practices

Plant buffalo grass. This low-growing Missouri native requires only ½ inch of water a week, compared with most turf grasses that need 1 to 1½ inches. Buffalo grass turf takes little or no fertilizer, and it is insect- and disease-resistant. Because it reaches a mature height of 4 to 6 inches, you can forget mowing. If you want a manicured look, mow it once a month. Buffalo grass grows well in full sun and likes dry, clay or average soil (not sandy). Tawny beige in winter and early spring, it starts to green in mid-April.

Try a prairie meadow. A diverse prairie planting can showcase Missouri's beautiful wildflowers and sturdy native grasses. It provides year-round habitat for wildlife that includes songbirds, small mammals and beneficial insects. Meadows, which can be planted in areas 1,000 square feet and larger, can include native grasses such as little bluestem and wildflowers such as prairie blazing star. Be sure to include a mowed border to create a transition zone between your house and meadow.



Indian grass and little bluestem

Getting started on your landscape

Including native plants in your landscape can be as simple as adding a native plant or two to existing flower beds or as challenging as starting with a blank slate. The basic steps, however, are the same for both.

Know your sun and soil conditions

If your site receives six to eight hours of sun, it's sunny — less than that, it's shady. There are three basic types of soil structure: sandy, clay, and loam. Much of Missouri is cursed with clay soils that are sticky when wet, form hard lumps when dry, and crack in hot weather. Sandy soils let moisture drain away quickly, taking nutrients with it. Both sandy and clay soil can be improved with the addition of organic matter such as composted plant material.

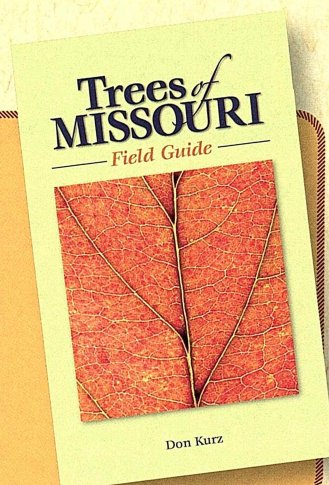
Consider your purpose and your property

If you're adding native plants to an existing bed, you need only to look for plants that will thrive in that location. If you have a blank slate, evaluate your space. Walk around your house and sketch existing trees, shrubs, and flower beds, if they exist. Sketch in walkways, patios, driveways, and make note of easements and drain pipes that might limit your landscaping.

Develop a plan

As you design your native plant garden, think in layers and begin with trees, which form the highest layer. Next consider small trees, shrubs, and vines that will thrive in the filtered light of trees and create the second layer. Finally, consider the third layer (the floor), which you can fill with perennials. An area with full sun has no layers and is perfect for a prairie planting. Continue by considering the birds, butterflies, and small mammals you want to attract to your property. Hummingbirds and butterflies

Identify trees in your yard, neighborhood, or natural area. 174 species are described, with visual organization of species by leaf arrangement and shape. Easy-to-understand descriptions, range maps, and full-color illustrations.



are attracted by nectar-producing plants; songbirds are attracted by fruit-producing shrubs in the summer and the seed heads of flowers in the fall.

Choose materials and methods

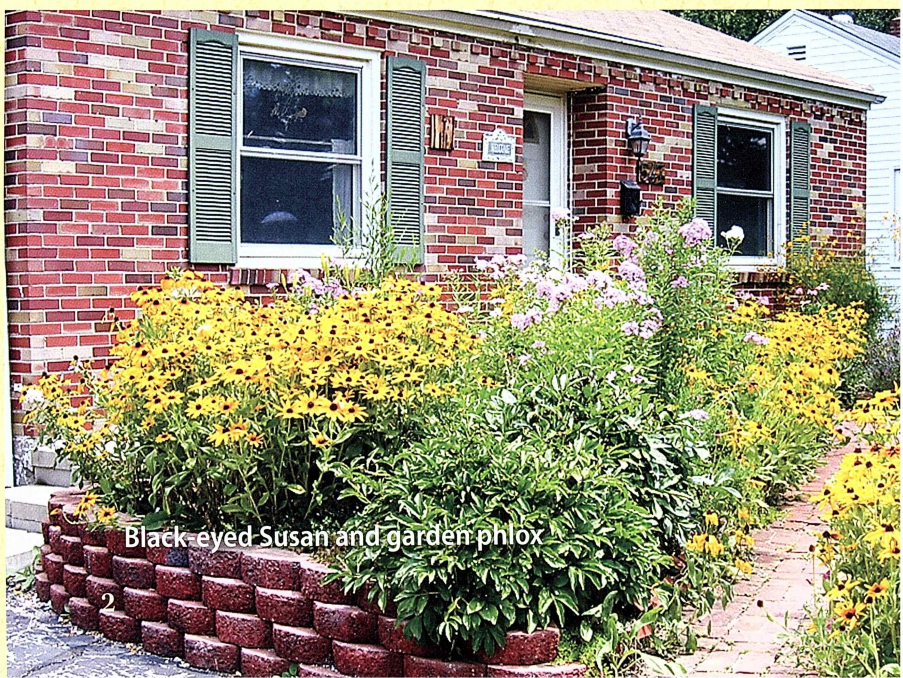
Follow this simple, tried-and-true adage: "Put the right plants in the right places, at the right time, in the right way." For example, a glade species planted in a boggy area will "drown," and prairie plants seeded into live sod will fail. Once you've determined the soil conditions on your planting site, select a species appropriate for those conditions.

For large projects, work in phases

Native-plant conversion projects take time. Seeding a few acres of prairie involves distinct phases and seasons of installation: preparation, seeding, and weed control. Plans that call for new features such as rain gardens or shrub rows should be undertaken one project at a time.



Red buckeye



Black-eyed Susan and garden phlox

Add Life to Your Landscape

Well-designed native landscapes create eye appeal and attract watchable wildlife to your yard. Wildlife species evolved with their favorite native plant species and prefer them for food and shelter. For design ideas, take a look at these diagrams and adapt them to fit your needs. While your space may be smaller or larger, the plant palette for attracting certain species of wildlife remains the same.



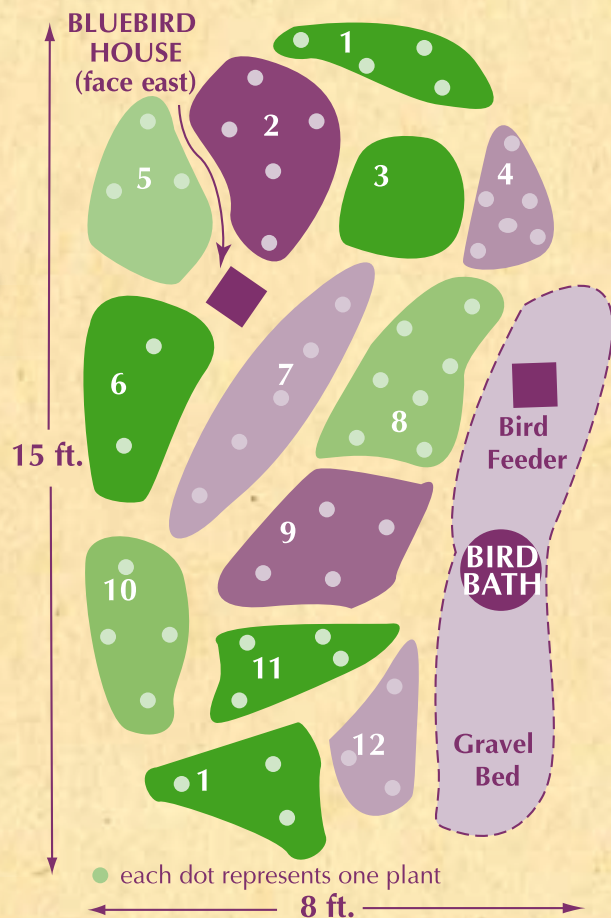
Finch feast

The **finch feast** is a wildlife-themed garden that concentrates on fruiting trees, shrubs, perennials and grasses with seed heads. Add a birdhouse, birdbath or feeder for even more attraction.

Legend

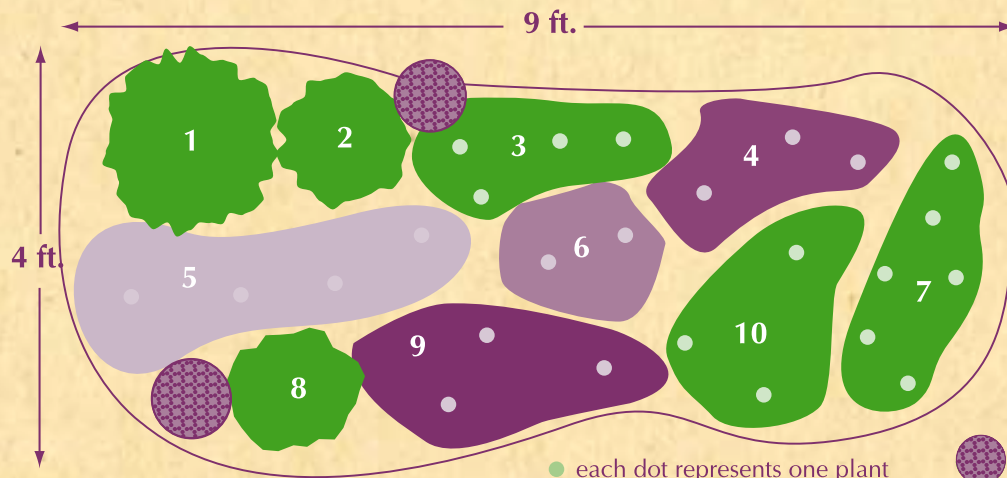
- | | |
|-----------------------|----------------------------|
| 1. Prairie dropseed | 7. Prairie blazing star |
| 2. Purple coneflower | 8. Orange coneflower |
| 3. Rose verbena | 9. Blue false indigo |
| 4. Missouri primrose | 10. Grey-headed coneflower |
| 5. Showy goldenrod | 11. Lanceleaf coreopsis |
| 6. Eastern gama grass | 12. Purple poppy mallow |

Note: plant in sun, but near one or more fruiting shrubs or small trees to provide food, cover and nesting.



Butterfly berm

The **butterfly berm** is an easy family project with colorful, nectar-rich natives such as New Jersey tea, prairie blazing star and butterfly weed. Add a shallow saucer or old birdbath filled with sand, gravel and water for a butterfly “watering hole.” Berms in general are good design elements for an urban or suburban yard. These independent beds can be created in a day or a weekend by adding a low mound of topsoil. It’s best if there is no vegetation growing in the area where the berm will be placed. This gives you an immediate clean slate, and the slight elevation really sets off plants.



Legend

1. Buttonbush
2. New Jersey tea
3. Rose verbena
4. Purple coneflower
5. Aromatic aster
6. Prairie blazing star
7. Butterfly weed
8. Lanceleaf coreopsis
9. Downy phlox
10. Shining blue star

● each dot represents one plant ● Butterfly watering hole

Hummingbird haven



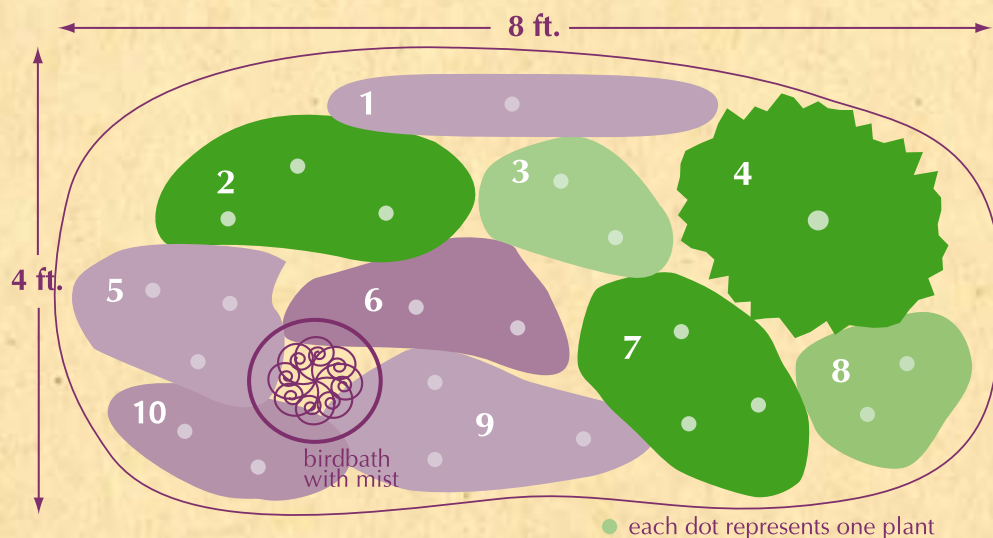
The **hummingbird haven** is similar to the butterfly berm. It concentrates on masses of nectar-producing flowers of various, vibrant hues including blue sage, yellow honeysuckle, foxglove beardtongue, cardinal flower and red buckeye. The addition of a hummingbird feeder or water mister can keep the ruby-throated wonders around from mid-spring to early fall.

Legend

1. Yellow honeysuckle (on trellis)
2. Royal catchfly
3. Blue sage
4. Red buckeye
5. Columbine
6. Wild bergamot
7. Garden phlox
8. Foxglove beardtongue
9. Purple beardtongue
10. Rose verbena



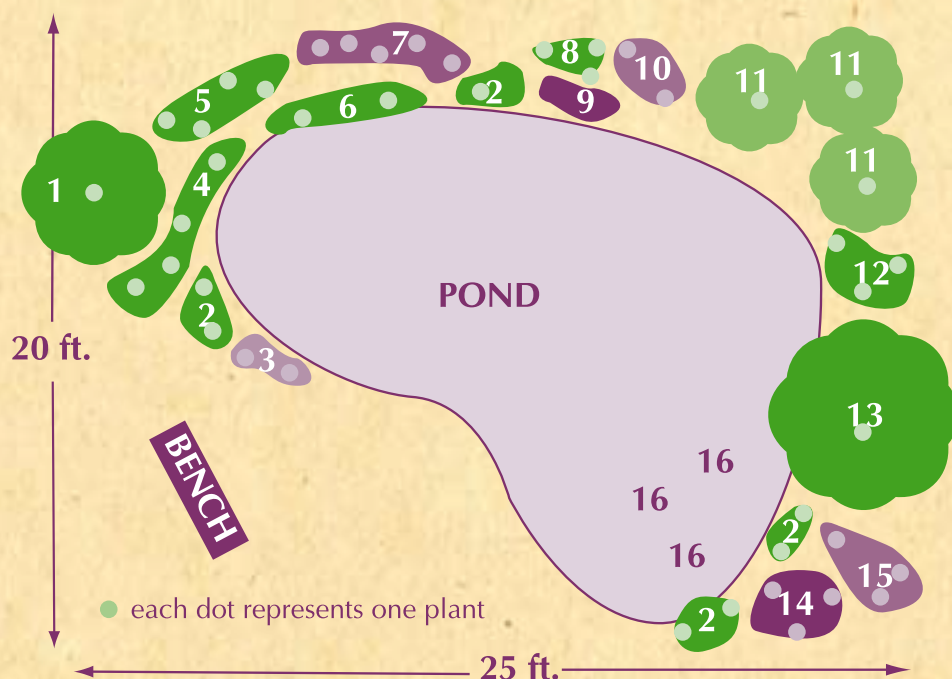
Fountain mist in birdbath allows hummers to clean their feathers



Frog pond



If you want a perennial water feature, you might install a small **frog pond** edged with dazzling cardinal flower, blue lobelia, pickerel plant and wild canna. A fringe of tussock sedge and southern blue flag completes the design. These natives also flourish in boggy, damp areas—or ones with heavy, wet and clay soils—where many other species cannot survive. Your frog pond can be made with a pre-formed or sheet liner, but one with a simple clay bottom will allow amphibians to over-winter.



Legend

1. Buttonbush
2. Tussock sedge
3. Swamp milkweed
4. Downy skullcap
5. Cliff goldenrod
6. Pickerel plant
7. Blue lobelia
8. Garden phlox
9. Southern blue flag
10. Silky dogwood
11. American beautyberry
12. Golden ragwort
13. Ninebark
14. Cardinal flower
15. Copper iris
16. Water canna

Improve Water Quality

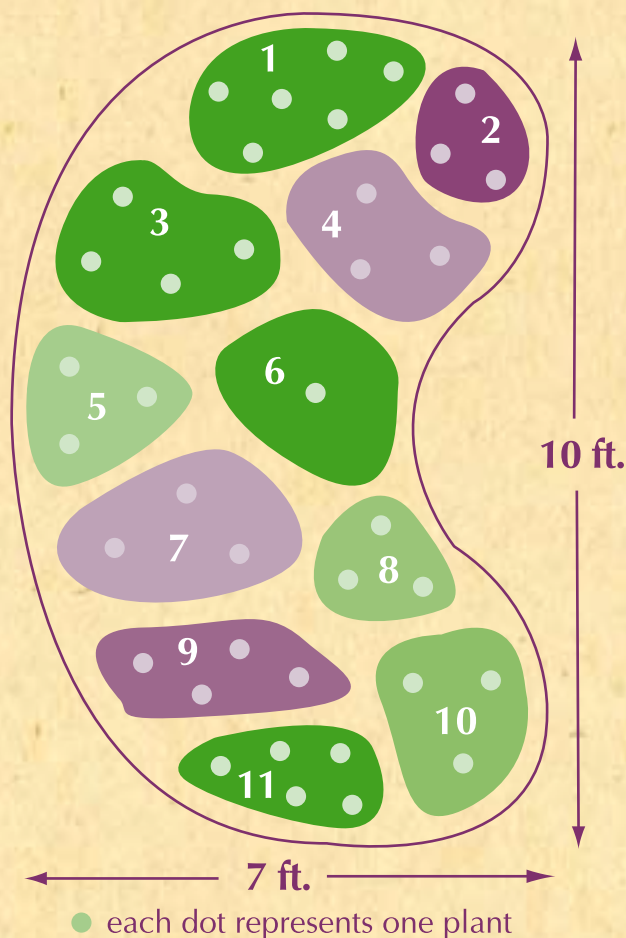
Gardeners can use wetland plants to create a landscape that will capture, filter, store and slowly release storm water. These moist landscapes, known as rain gardens, trap and use nutrients that otherwise would run off and pollute nearby streams. A rain garden is a shallow depression that temporarily holds water. It may be an existing low area or it may be dug and shaped to hold water. The goal is to intercept water runoff and retain it long enough for it to percolate into the soil. In addition to filtering stormwater, rain gardens bring beauty and wildlife to the landscape.

Follow these steps to create your rain garden

1. Estimate your roof's square footage. The rain garden should be about one third the size of the area. For instance, if the roof area is 200 square feet, the rain garden should be about 70 square feet.
2. Choose a spot at least 10 feet from your house and downslope from the downspout.
3. Before you dig, be sure you won't encounter any utility lines. Call (800) DIG-RITE so utility lines can be marked.
4. For a 200-square-foot roof, dig a shallow depression 6-to-8-inches deep and 10-feet long by 7-feet wide (adjust dimensions if roof is larger or smaller). Slope sides toward center.
5. Test the overflow pattern to be sure it runs away from your house. Do this by filling the depression with water and watching the overflow. If necessary, dig a shallow channel to direct water away from buildings and toward the street.
6. Direct your downspout or sump-pump outlet to your rain garden depression, either by digging a shallow channel or by piping runoff through a buried 4-inch, black-plastic drainpipe.
7. Now you are ready to plant the native plants recommended in the designs on this page. Place taller plants in the center of design and shorter ones along the edges. Adjust plant numbers if your garden is larger or smaller.
8. Put a 3-inch layer of untreated shredded hardwood mulch on bare soil around plants to conserve moisture and keep your design looking neat.
9. Water the planting every other day for a few weeks or until it shows growth and good establishment.

Rain garden

This design is for a small rain garden with suggestions of native plant species for clay soils or well-drained sandy soils. These designs are guidelines. It's great to strive for maximum diversity, but you don't need all of the plants listed to have a beautiful, absorbent and functional rain garden.



Legend (Clay soils)

1. False dragonhead
2. Palm sedge
3. Softstem bulrush
4. Arrowhead
5. Giant bur-reed
6. Water canna
7. Squarestem spike rush
8. Southern blue flag
9. Swamp milkweed
10. River oats
11. Cardinal flower

Legend (Well-drained to sandy soils)

1. Tussock sedge
2. Marsh milkweed
3. New England aster
4. Sweet coneflower
5. Lizard's tail
6. Buttonbush
7. Shining blue star
8. Riddell's goldenrod
9. Rose turtlehead
10. River oats
11. Blue lobelia

Ready, Set, Go

You've evaluated your site, created a plan, selected plants and are ready to plant. Remember that site preparation is crucial to the success of the project.

Prepare

Even if you're planting a bed of native forest plants, you must kill competing vegetation first. You can dig out competitors (if there aren't too many) or kill them with a glyphosate herbicide.

For small areas, you can cover the area with newspapers. Without light, weed seed cannot sprout and growing vegetation will die. If you are using seeds, put the barrier in place at least two months before planting. If containerized plants are used, you can put the barrier down and plant at the same time. Cover the newspaper with finely ground mulch for a finished appearance.

If seeding a large area, site preparation should begin in the spring followed by seeding in early winter. For best results, begin in May with an application of non-selective herbicide. If (or when) weeds sprout, mow them before they produce seed heads. In September, evaluate the site. If a healthy stand of vegetation is present, apply a second application of non-selective herbicide. In December, plant native grass and forb seed.

Install

Decide whether you're going to plant or seed. Small projects are best established with plants or plugs, and larger installations are best done by seeding—either by broadcasting or drilling. If you plant in December, freezing and thawing will work the seed into the ground. For spring installations, follow seeding with a roller to ensure good seed-to-soil contact. Water until the planting is established.

One inch of rain falling on a 1,000-square-foot roof generates 600 gallons of water. A rain garden plays a significant role in storing and filtering this water.



Maintain

Any time soil is disturbed, a burst of weed growth is triggered. These weeds can quickly shade our new native seedlings.

For weed control in small plantings of containerized plants, apply mulch immediately after planting to a depth of 2 inches. Remove clods that might allow light to penetrate the mulch and hand weed anything that might escape.

For large areas, mowing is the best option. The first year, mow when vegetation is 6 to 12 inches high. Native plants are sending down roots and will be shorter than non-desirable vegetation. It may be necessary to mow several times to keep vegetation below 12 inches. The second year, continue to mow, but less frequently. By the third year, native grasses and forbs should be able to hold their own. In future years, plan to burn or mow every third year.



Plants to Try

Plants that need *full sun*

Missouri primrose 🌸 *Oenothera macrocarpa*

Flowers: May–August

Mature height, 10 inches; spread, 24–26 inches

Also called glade lily, this plant of Missouri's glades, bluffs and rocky prairies has multiple stems that trail along the ground. Flowers open in late afternoon for night pollination by moths. Lemon-yellow flowers are up to 4 inches wide.



Missouri primrose

Missouri black-eyed Susan 🌸 *Rudbeckia missouriensis*

Flowers: June–October

Mature height, 12–30 inches; spread 16–24 inches

Also called Missouri coneflower, this plant is found throughout the Ozarks on limestone and dolomite glades and in rocky prairies. It can dominate barren, rocky areas in full sun. In home landscapes, it thrives in well-drained soil with full sun.



Missouri black-eyed Susan

Butterfly milkweed 🌸 *Asclepias tuberosa*

Flowers: May–September

Mature height, 18–24 inches; spread, 24 inches

A vibrant wildflower, butterfly milkweed inhabits prairies, glades and rocky, open places such as roadsides throughout the state. It is one of 15 species of milkweed native to Missouri. It is an excellent source of nectar for many butterflies and is food for monarch butterfly larva. It grows best on well-drained soil.



Butterfly milkweed

Prairie blazing star 🌸 *Liatris pycnostachya*

Flowers: July–October

Mature height, 36–48 inches; spread, 12–14 inches

Found on prairies and rocky, open ground, this plant grows wild nearly statewide and makes an excellent landscaping choice. Bumblebees, butterflies and other insects are frequent summer visitors to prairie blazing star, which prefers average to moist soils. Older plants can produce 10 or more flowering stems.



Prairie blazing star

Purple prairie clover 🌸 *Dalea purpurea*

Flowers: May–September

Mature height, 18–24 inches; spread, 16–20 inches

A legume of prairies, glades and other open habitats, purple prairie clover grows wild throughout the state, with the exception of the lowland counties in southeastern Missouri. It grows well in dry soils. Finely cut leaves make it a favorite for home landscapes.



Purple prairie clover

Plants for *shady areas*

Celandine poppy 🌸 *Stylophorum diphyllum*

Flowers: March–May

Mature height, 16 inches; spread, 18 inches

Found on wooded slopes and moist, wooded valleys of central and southeast Missouri, celandine poppy is an excellent choice for a garden if provided with humus-rich soil. Plants will go dormant in the summer if the soil dries out or if they receive afternoon sun.

Cardinal flower 🌸 *Lobelia cardinalis*

Flowers: July–October

Mature height, 24–48 inches; spread, 12–18

Late summer canoeists often see the brilliant plumes of cardinal flower growing along mud or gravel banks of Ozark streams. Cardinal flower also inhabits other wet sites throughout much of the state. It is a hummingbird magnet and also attracts butterflies. Cardinal flower needs moderate shade and tolerates sun in rich, organic soil. Unless planted in a moist location, it requires watering through dry periods.

Columbine 🌸 *Aquilegia canadensis*

Flowers: April–July

Mature height, 24 inches; spread, 12 inches

This plant grows throughout most of Missouri. Found on limestone or dolomite ledges in the Ozarks, it inhabits moist woodlands and other habitats elsewhere in the state. Columbine spreads readily from seed in flower beds. It tolerates shade or sun in average to moist soils. The red, tubular flowers are a popular nectar source for hummingbirds.

Purple coneflower 🌸 *Echinacea purpurea*

Flowers: May–October

Mature height, 24–36 inches; spread, 18–24 inches

The large, showy flower heads of purple coneflower can appear in open woodlands throughout most of Missouri. A single older plant can have many stems of flowers, which are a good nectar source for butterflies. The plant grows well in light shade and tolerates full sun in average to moist soil. Many gardeners use this plant for cut flowers.

Crested iris 🌸 *Iris cristata*

Flowers: April–May

Mature height, 5–10 inches; spread, 12–16 inches

Found along streams in lowland woods, crested iris (also called dwarf crested iris) makes a delightful ground cover in a partially shaded area. It also can be used as a border in home landscapes. Crested iris prefers well-drained soil and attracts hummingbirds.



Celandine poppy



Cardinal flower



Columbine



Purple coneflower



Crested iris

Plants for *rain gardens*

Southern blue flag 🌸 *Iris virginica*

Flowers: May–June

Mature height, 2–3 feet; spread, 1–2 feet

A late spring bloomer, this iris is native to inland swamps, marshes and flood plains in northern and central Missouri. It has fragrant, blue violet flowers with falls crested in yellow and white. Over time, it forms a solid mat that needs thinning to stimulate flowers that provide nectar for hummingbirds.



Southern blue flag

Golden Alexanders 🌸 *Zizia aurea*

Flowers: April–June

Mature height, 12–30 inches; spread, 16–24 inches

This member of the carrot family is a host plant for the black swallowtail butterfly. The thick, glossy semi-evergreen foliage provides nice contrast to other native plants and the long lasting flowers are followed by attractive seed clusters.



Golden Alexanders

Culver's root 🌸 *Veronicastrum virginicum*

Flowers: June–August

Mature height, 3–5 feet; spread, 2–4 feet

The candle like spikes of pinkish-white flowers are 6 inches long and bloom four to six weeks. It is a good cut flower and provides nectar for many varieties of bees.



Culver's root

Swamp milkweed 🌸 *Asclepia incarnate*

Flowers: August–September

Mature height, 3–4 feet; spread, 3–4 feet

Also known as marsh milkweed, it has a faint vanilla fragrance when it blooms. This milkweed grows naturally in swamps and wet meadows and performs well in the garden. It's an excellent nectar plant for butterflies and an exceptional host to monarch larva. The blooms also provide nectar for hummingbirds and butterflies.



Swamp milkweed

Palm sedge 🌸 *Carex muskingumensis*

Mature height, 11–24 inches; spread, 12–18 inches

With 8-inch-long, pointed leaves radiating from stem tops, this sedge resembles miniature palm fronds. It is almost evergreen and it does well in light shade to full sun.



Palm sedge

Landscape-friendly *grasses, sedges and shrubs*

Prairie dropseed 🌿 *Sporobolus heterolepis*

Mature height, 12 inches (flowering stems 2–3 feet); spread, 36 inches

Prairie dropseed forms dense mounds of narrow, rich-green, fountain-shaped foliage. For a good, medium-height groundcover, plant it 2 feet apart in full sun. It has a distinctive odor when it blooms in September. It's difficult to establish by direct seeding, so plant plugs instead.

Little bluestem 🌿 *Schizachyrium scoparium*

Mature height, 24–26 inches; spread, 12 inches

Little bluestem is perfect for creating a prairie patch in the landscape. This clump-forming, blue-green grass is non-spreading and turns a rich russet color in the fall. It stands erect throughout the winter, providing texture in the garden and cover for wildlife.

Tussock sedge 🌿 *Carex stricta*

Mature height, 12–18 inches; spread, 18–30 inches

This sedge has dense mounds of narrow, rich green, fountain-shaped foliage similar to prairie dropseed. It, however, needs moist soil conditions, making it a good choice for water gardens, rain gardens, swales and pond edges. It provides cover and nest sites for birds.

Rusty black haw 🌿 *Viburnum rufidulum*

Flowers: March–April

Mature height, 10–15 feet; spread, 5–10 feet

With glossy green, leathery leaves, rusty black haw can be grown as a shrub or pruned to form a small tree. Drooping clusters of blue-black fruit appear in September (perfect timing for migratory birds) and leaves turn rich burgundy as days shorten.

Spice bush 🌿 *Lindera benzoin*

Flowers: Late March–April

Mature height, 9–15 feet; spread, 6–10 feet

A broad, rounded, multi-stemmed shrub, spice bush is covered with fragrant yellow-green flowers in early spring. Its aromatic leaves turn deep yellow-gold in fall. Red berries appear in late summer. Larva of the spicebush swallowtail butterfly feed on the leaves.



Prairie dropseed



Little bluestem



Tussock sedge



Rusty black haw

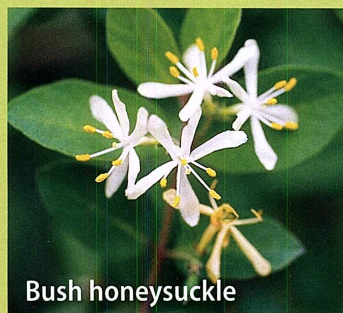


Spice bush

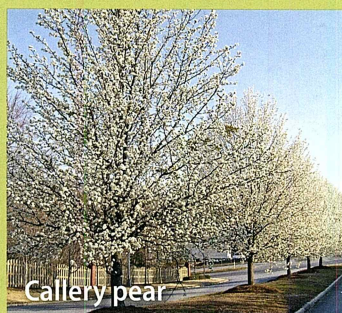
Stop the Invaders

"Exotic," "alien," or "nonnative" species describe plants, animals, or other organisms that have been accidentally or purposefully introduced into an area outside of their origin. These invasive organisms displace native wildlife and consume their habitat. Exotic species can come from another continent, another part of

the country or even from another watershed. Some of these invaders are readily available in the marketplace and many unsuspecting gardeners have unknowingly contributed to their spread. Bush honeysuckle, callery pear, wintercreeper, and reed canary grass are just a few invasive plants of concern. To learn how to curtail these and other invasive plants visit short.mdc.mo.gov/ZoC.



Bush honeysuckle



Callery pear



Wintercreeper



Reed canary grass

Know More

Incorporating native plants into your landscape is made easy by going to grownative.org. This website provides full color photos and detailed information on more than 200 native plants. It also features a plant search option that allows users to find plants that meet specific characteristics and a buyer's guide to help you locate native plant suppliers.

Grow Native! is a program of the Missouri Prairie Foundation. It offers educational activities throughout the state and coordinates a network of native plant suppliers to ensure a reliable source of native plants. The Missouri Prairie Foundation works to protect and restore prairies and native grasslands throughout the state. To learn more about their activities go to moprairie.org.



Missouri Department of Conservation

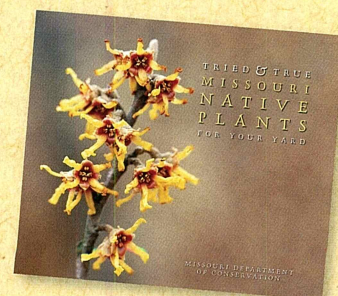
Missouri Department of Conservation offers several publications that will help you learn about and use native plants in the landscape. Free publications include:

- 🌿 *Butterfly Gardening*
- 🌿 *Homegrown Milkweeds*
- 🌿 *Milkweeds and Monarchs*
- 🌿 *Replace Nonnative Plants With Missouri Natives*

Find these and other free titles online at short.mdc.mo.gov/4Y6. For copies write to **Free Publications, Missouri Department of Conservation, PO Box 180, Jefferson City, MO 65102-0180** or send an email message to Publications.Staff@mdc.mo.gov.

For-sale items are available at most MDC nature centers. Or order the following items online at **MDC Nature Shop** at mdcnatureshop.com or call toll-free, 877-521-8632:

- 🌿 *A Key to Missouri Trees in Winter*
- 🌿 *Missouri Wildflowers*
- 🌿 *Native Plant Seedling ID Guide*
- 🌿 *Shrubs and Woody Vines of Missouri Field Guide*
- 🌿 *Trees of Missouri Field Guide*
- 🌿 *Tried and True: Missouri Native Plants for Your Yard*



Hundreds of plants are native to Missouri and each fills a niche in its natural environment. *Tried and True* features more than 100 of those plants that are well suited to home landscapes and are readily available from nurseries throughout the state.



Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, religion, national origin, sex, ancestry, age, sexual orientation, veteran status, or disability. Questions should be directed to the Department of Conservation, PO Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to Chief, Public Civil Rights, Office of Civil Rights, U.S. Department of the Interior, 1849 C Street, NW, Washington, D.C. 20240.

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